Electronic Version
Stylesheet Version v1.1.1

Claims

[c1] In a system where an automatic meter reader device communicates with a host at a remote location using a communication line that is shared with at least one other user, the improvement comprising

(A) means for collecting information about the times when said communication line is used by said at least one other user;

(B) means for analyzing said information to determine time periods when said communication line is less likely to be used by said at least one other user; and

(C) means for directing said automatic meter reader device to communicate with said remote location during said time periods.

[c2] The improvement of Claim 1 wherein said automatic meter reader device monitors electricity usage.

[c3] The improvement of Claim 1 wherein said communication line is a telephone line, cable television modem, satellite communication, or radio frequency communication.

[c4] The improvement of Claim 1 wherein said means for collecting information is located at the site of said automatic meter reader device.

[c5] The improvement of Claim 1 wherein said means for collecting information collects information about every use of said communication line.

[c6] The improvement of Claim 1 wherein said means for collecting information collects only information about the occurrence of conflicts in the use of said communication line.

[c7] The improvement of Claim 1 wherein said means for analyzing said information is a program that counts calls in time slots throughout the day and identifies the slots with the least number of calls.

[c8] The improvement of Claim 1 wherein said means for analyzing said information is an algorithmic pattern recognition processor.

[c9] The improvement of Claim 10 wherein said means for analyzing said information is a learning program.

[c10] The improvement of Claim 1 wherein said means for analyzing said information is an automatic neural network algorithm.

[c11] The improvement of Claim 1 wherein said means for analyzing said information is located at said remote location.

[c12] The improvement of Claim 1 wherein said information is analyzed subject to constraints on communications between said automatic meter reader device and said host.

[c13] The improvement of Claim 1 wherein said means for directing said automatic meter reader is part of said automatic meter reader.

[c14] The improvement of Claim 1 wherein said means for directing said automatic meter reader device also controls when said host communicates with said automatic meter reader device.

[c15] The improvement of Claim 1 wherein said means for directing said automatic meter reader device terminates use of said communication line by said automatic meter reader device when another user comes on said line.

[c16] In a system where an automatic meter reader device reads electrical power usage and communicates about said usage to a host at a remote location using a telephone line that is shared with at least one other user, the improvement comprising

(A) means for collecting information about the time and date when said communication line is used by said at least one other user;

(B) an algorithmic pattern recognition processor for analyzing said information to determine time periods when said communication line is less likely to be used by said at least one other user; and

(C) means for directing said automatic meter reader device and said host to communicate with each other only during said time periods.

[c17] The improvement of Claim 16 wherein said algorithmic pattern recognition processor is an automatic neural network algorithm.

[c18] A method of communicating between an automatic meter reader and a remote location over a communication line that is shared with at least one other user comprising

(A) collecting information about the times of day when said communication line is used by said at least one other user;

(B) analyzing said information to determine time periods when said communication line is less likely to be used by said at least one other user; and

(C) directing said AMR device to communicate with said remote location during said time periods.

[c19] The method of Claim 18 wherein said information is collected only when a conflict arises between the use of said communication line by said automatic meter reader and its use by another user.

[c20] The method of Claim 18 wherein said information is analyzed using an automatic neural network algorithm.